

- d) depositing a metal layer in the feature, wherein the metal layer comprises copper.
2. The method of claim 1, wherein the first barrier layer is deposited using chemical vapor deposition techniques.
3. The method of claim 2, wherein the first barrier layer comprises Si_xN_y .
4. (Twice Amended) The method of claim 3, wherein the first barrier layer [formed on] is removed from the bottom of the feature [is removed] using etching techniques.
5. The method of claim 4, wherein depositing the metal layer comprises depositing the metal layer at least partially on the first and second barrier layers.
6. The method of claim 5, wherein the metal layer is deposited using chemical vapor deposition techniques.
7. The method of claim 5, wherein the metal layer is deposited using physical vapor deposition techniques.
8. The method of claim 1, wherein the metal layer is deposited by first depositing a metal layer using chemical vapor deposition techniques and then depositing a metal layer using physical vapor deposition techniques to fill the feature.
11. The method of claim 1, wherein the first barrier layer is deposited to a thickness of between about 50 Å to about 100 Å.
12. (Thrice Amended) The method of claim 1, wherein the metal layer is deposited using [directional] a sputtering technique[s] that avoids substantial deposition on the sidewalls of the feature.
13. The method of claim 12, wherein the metal layer is heated to a temperature of between

about room temperature and about 500° C and then subjected to a pressurized environment.

14. The method of claim 13, wherein the pressurized environment comprises a pressure between about 1000 psi and about 100,000 psi.

15. A method of filling a feature in a dielectric layer, comprising:

- a) depositing a first barrier layer over a blanket dielectric layer;
- b) forming a feature through the barrier layer and the dielectric layer to expose an underlayer;
- c) depositing a second barrier layer on a bottom and sidewalls in the feature;
- d) removing the second barrier layer formed at the bottom of the feature; and
- e) selectively depositing a metal layer on the underlayer exposed in the feature.

16. The method of claim 15, wherein the first barrier layer and the second barrier layer are comprised of Si_xN_y .

17. The method of claim 16, wherein the first barrier layer and the second barrier layer are formed using chemical vapor deposition techniques.

18. (Thrice Amended) The method of claim 17, wherein the second barrier layer [formed on] is removed from the bottom of the feature [is removed] by sputter etching techniques.

20. The method of claim 5, wherein the metal layer is deposited by first depositing the metal layer using chemical vapor deposition techniques and then depositing the metal layer using physical vapor deposition techniques to fill the feature.

21. The method of claim 15, wherein the metal layer comprises copper.

22. The method of claim 1, wherein the metal layer is deposited using electroplating techniques.